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Amendments to the Claims

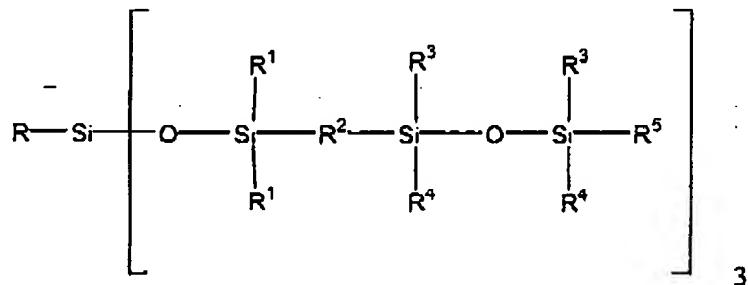
Please cancel Claims 1, 12-22 and 34-44 without prejudice. Please amend Claims 2, 7 and 23.

Please add new Claims 45 - 51. The Claim Listing below will replace all prior versions of the claims in the application.

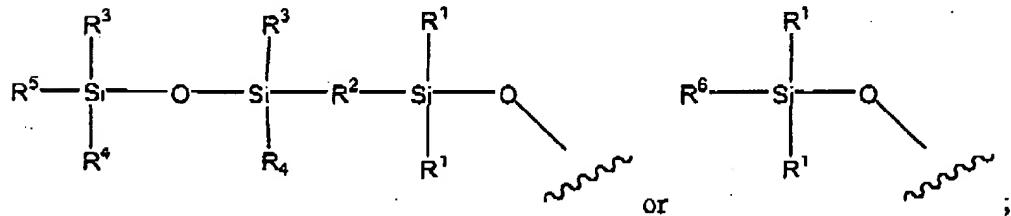
Claim Listing

1. (Cancelled)

2. (Currently Amended) A The compound of Claim 1 wherein the compound [[is]] represented by the following structural formula:



wherein R is represented by a structural formula selected from:



wherein:

each group R¹, each group R³ and each group R⁴ is independently a substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂ alkyl or aryl group;

each group R² is independently a substituted or unsubstituted C₁₋₁₂ alkylene, C₁₋₁₂ cycloalkylene, C₁₋₁₂ arylalkylene, or arylene group, -Y₁-[O-Y₁]_p-; -Y₁-Si(R²)₂-Y₁-; -Y₁-Si(R²)₂-Y₁-O-Y₁-Si(R²)₂-Y₁-; or -Y₁-Si(R²)₂-Y₁-Si(R²)₂-Y₁-;

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each group R⁵ is independently, an epoxide substituted aliphatic group having 2-10 carbon atoms; and

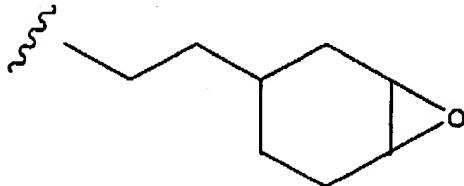
each group R⁶ is independently hydrogen, an alkenyl, a substituted or unsubstituted C₁-12 alkyl, C₁-12 cycloalkyl, aryl substituted C₁-12-alkyl or aryl or R²-(O-Y₁)_m-, (R²)₃Si-(O-Si(R²)₂)_q-Y₁- or (R²)₃Si-(O-Si(R²)₂)_q-O-;

each R² is independently a substituted or unsubstituted C₁-12 alkyl group, C₁-12 cycloalkylalkyl group, aryl substituted C₁-12 alkyl group or aryl group;

each Y₁ is independently a C₁-12 alkylene group;

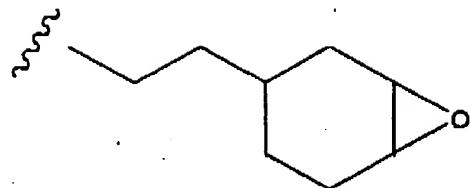
p is an integer from 1 to 5; m is an integer from 1 to 10; and q is an integer from 0 to 4.

3. (Original) The compound of Claim 2 wherein each group R² is independently, a substituted or unsubstituted C₁-12 alkylene, C₁-12 cycloalkylene, C₁-12 substituted arylalkylene, or arylene group; and each R⁶ is independently a substituted or unsubstituted C₁-12 alkylsilane, C₁-12 cycloalkylsilane, C₁-12 alkoxy silane, aryl substituted C₁-12 alkylsilane, a hydrogen, a vinyl, a substituted or unsubstituted C₁-12 alkyl, C₁-12 dialkylether, (C₁-12 cycloalkyl)C₁-12 alkylether, C₁-12 cycloalkyl, aryl substituted C₁-12 alkyl or aryl group.
4. (Original) The compound of Claim 3 wherein at least one R⁵ comprises a cycloalkene oxide.
5. (Original) The compound of Claim 3 wherein each R⁵ is represented by the following structural formula:



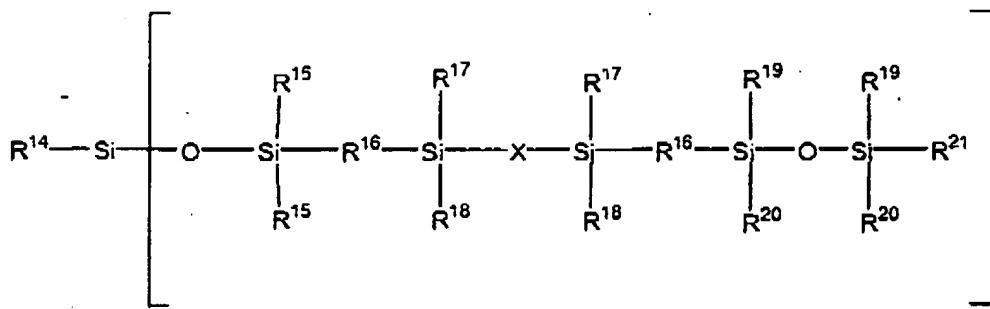
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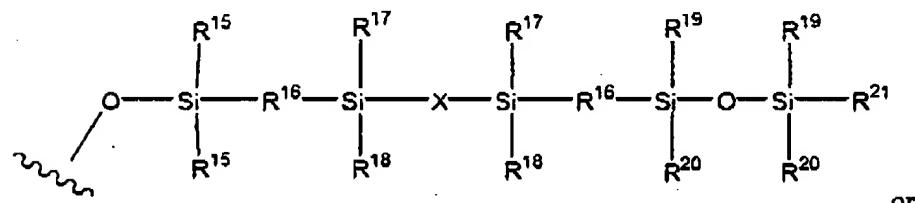


6. (Original) The compound of Claim 3 wherein R^1 is a methyl group; each group R^2 is an ethylene, hexylene, or octylene group; each group R^3 is a methyl group; each group R^4 is a methyl group; each group R^5 is a 2-(3,4-epoxycyclohexyl) ethyl grouping, and each group R^6 is a hydrogen or ethenyl.

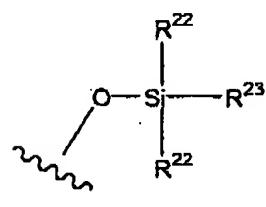
7. (Currently Amended) ~~A The compound of Claim 1 wherein the compound [is]~~ represented by the following structural formula:



wherein R^{14} is represented by a structural formula selected from:



or



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each group R¹⁵, each group R¹⁷, each group R¹⁸, each group R¹⁹, each group R²⁰ and each group R²² is independently a substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂ alkyl or aryl group;

each group R¹⁶ is independently a substituted or unsubstituted C₁₋₁₂ alkylene, C₁₋₁₂ cycloalkylene, C₁₋₁₂ arylalkylene, or arylene group, -Y₁-[O-Y₁]_p-, -Y₁-Si(R²)₂-Y₁-, -Y₁-Si(R²)₂-Y₁-O-Y₁-Si(R²)₂-Y₁-, or -Y₁-Si(R²)₂-Y₁-Si(R²)₂-Y₁-;

each R²¹ is independently an epoxide substituted aliphatic group having 2-10 carbon atoms;

R²³ is independently hydrogen, an alkenyl, a substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂-alkyl or aryl or R²-(O-Y₁)_m-, (R²)₃Si-(O-Si(R²)₂)_q-Y₁- or (R²)₃Si-(O-Si(R²)₂)_q-O-;

each group X is independently oxygen or R¹⁶;

each R² is independently a substituted or unsubstituted C₁₋₁₂ alkyl group, C₁₋₁₂ cycloalkylalkyl group, aryl substituted C₁₋₁₂ alkyl group or aryl group;

each Y₁ is independently a C₁₋₁₂ alkylene group;

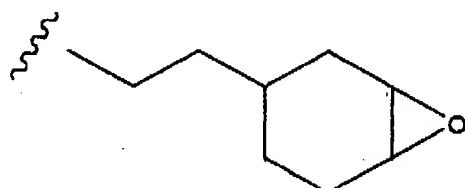
p is an integer from 1 to 5; m is an integer from 1 to 10; and q is an integer from 0 to 4.

8. (Original) The compound of Claim 7 wherein each group R¹⁶ is independently a substituted or unsubstituted C₁₋₁₂ alkylene, C₁₋₁₂ cycloalkylene, aryl substituted C₁₋₁₂ alkylene or arylene group; R²³ is, independently, a hydrogen, a monovalent substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ dialkylether (alkyl-O-alkylene-), C₁₋₁₂ cycloalkyl C₁₋₁₂ alkylether, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂ alkyl or aryl group; and X is oxygen.
9. (Original) The compound of Claim 8 wherein at least one R²¹ comprises a cycloalkene oxide.

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10. (Original) The compound of Claim 9 wherein each is R²¹ represented by the following structural formula:



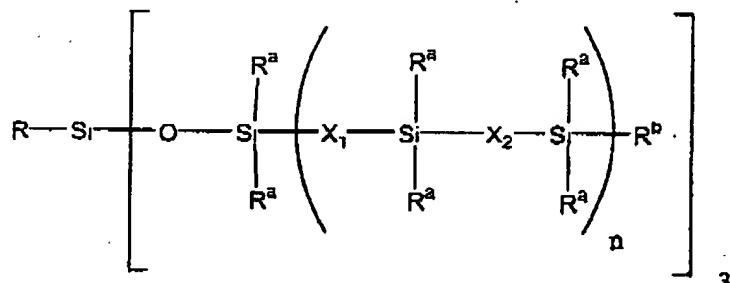
11. (Original) The compound of Claim 10 wherein: each group R¹⁵, R¹⁷, R¹⁸ R¹⁹, R²⁰ and R²² is a methyl group; each group R¹⁶ is an ethylene, hexylene, or octylene group; and R²³ is a hydrogen, hexyl, or alkylether.

12-22. (Cancelled)

23 (Currently Amended) A holographic recording medium comprising:

- a) at least one polyfunctional epoxide monomer;
- b) a binder which is capable of supporting cationic polymerization;
- c) an acid generator capable of producing an acid upon exposure to actinic radiation; and, optionally,
- d) a sensitizer.

The holographic recording medium of Claim 18 wherein the polyfunctional epoxide monomer is by the following structural formula:



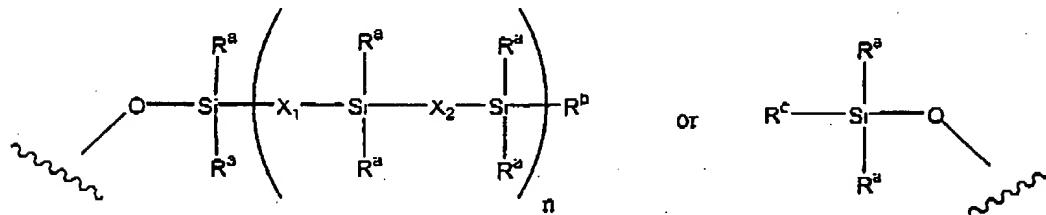
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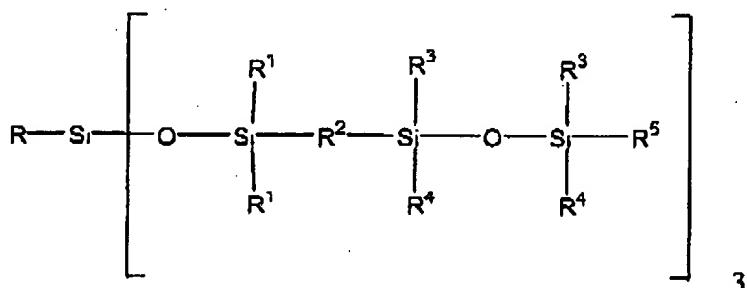
wherein:

 X_1 and X_2 are independently each an inert linking group;each R^a is independently a substituted or unsubstituted aliphatic group or a substituted or unsubstituted aryl group; n is 1, 2, 3 or 4;

R is a substituted or unsubstituted aliphatic group, a substituted or unsubstituted aryl group or is represented by a structural formula selected from:

each R^b is independently an epoxide substituted aliphatic group; andR^c is H, an unsubstituted aliphatic group, a substituted aliphatic group, an unsubstituted aryl group, a substituted aryl group, a substituted siloxane group, an unsubstituted siloxane group, a substituted polysiloxane group or an unsubstituted polysiloxane group.

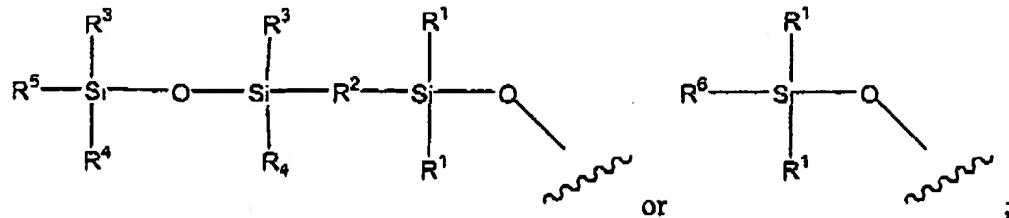
24. (Original) The holographic recording medium of Claim 23 wherein the polyfunctional epoxide monomer is represented by the following structural formula:



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wherein R is represented by a structural formula selected from:



wherein:

each group R¹, each group R³ and each group R⁴ is independently a substituted or unsubstituted C₁-12 alkyl, C₁-12 cycloalkyl, aryl substituted C₁-12 alkyl or aryl group;

each group R² is independently a substituted or unsubstituted C₁-12 alkylene, C₁-12 cycloalkylene, C₁-12 arylalkylene, or arylene group, -Y₁-[O-Y₁]_p-, -Y₁-Si(R²)₂-Y₁-, -Y₁-Si(R²)₂-Y₁-O-Y₁-Si(R²)₂-Y₁-, or -Y₁-Si(R²)₂-Y₁-Si(R²)₂-Y₁-;

each group R⁵ is independently, an epoxide substituted aliphatic group having 2-10 carbon atoms; and

each group R⁶ is independently hydrogen, an alkenyl, a substituted or unsubstituted C₁-12 alkyl, C₁-12 cycloalkyl, aryl substituted C₁-12-alkyl or aryl or R²-(O-Y₁)_m, (R²)₃Si-(O-Si(R²)₂)_q-Y₁- or (R²)₃Si-(O-Si(R²)₂)_q-O-;

each R² is independently a substituted or unsubstituted C₁-12 alkyl group, C₁-12 cycloalkylalkyl group, aryl substituted C₁-12 alkyl group or aryl group;

each Y₁ is independently a C₁-12 alkylene group;

p is an integer from 1 to 5; m is an integer from 1 to 10; and q is an integer from 0 to 4.

25. (Original) The holographic recording medium of Claim 24 wherein each group R² is independently, a substituted or unsubstituted C₁-12 alkylene, C₁-12 cycloalkylene, aryl substituted C₁-12 alkylene, or arylene group each R⁶ is independently a monovalent substituted or unsubstituted C₁-12 alkylsilane, C₁-12 cycloalkylsilane, C₁-12 alkoxysilane, aryl substituted C₁-12 alkylsilane, a hydrogen, a vinyl, a monovalent substituted or

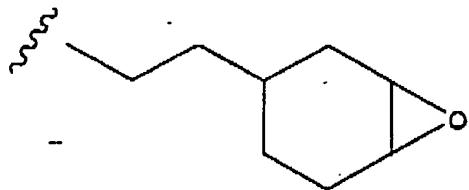
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unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ dialkylether, (C₁₋₁₂ cycloalkyl)C₁₋₁₂ alkylether, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂ alkyl or aryl group.

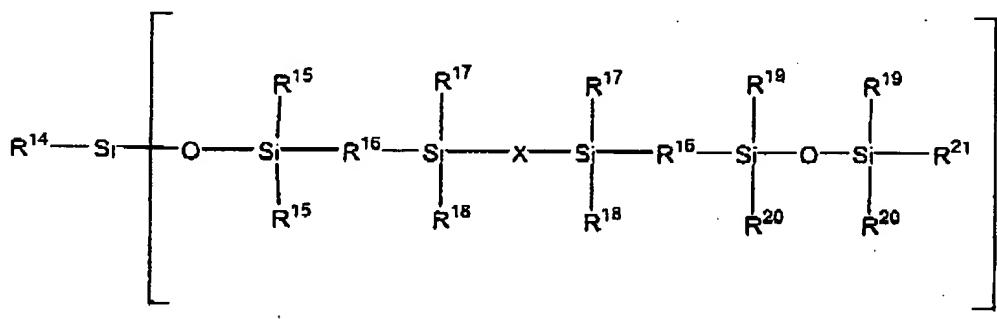
26. (Original) The holographic recording medium of Claim 25 wherein at least one R⁵ comprises a cycloalkene oxide.

27. (Original) The holographic recording medium of Claim 26 wherein each R⁵ is represented by the following structural formula:



28. (Original) The holographic recording medium of Claim 27 wherein R¹ is a methyl group; each group R² is an ethylene, hexylene, or octylene group; each group R³ is a methyl group; each group R⁴ is a methyl group; each group R⁵ is a 2-(3,4-epoxycyclohexyl) ethyl grouping, and each group R⁶ is a hydrogen or ethenyl.

29. (Original) The holographic recording medium of Claim 23 wherein the polyfunctional epoxide monomer is represented by the following structural formula:

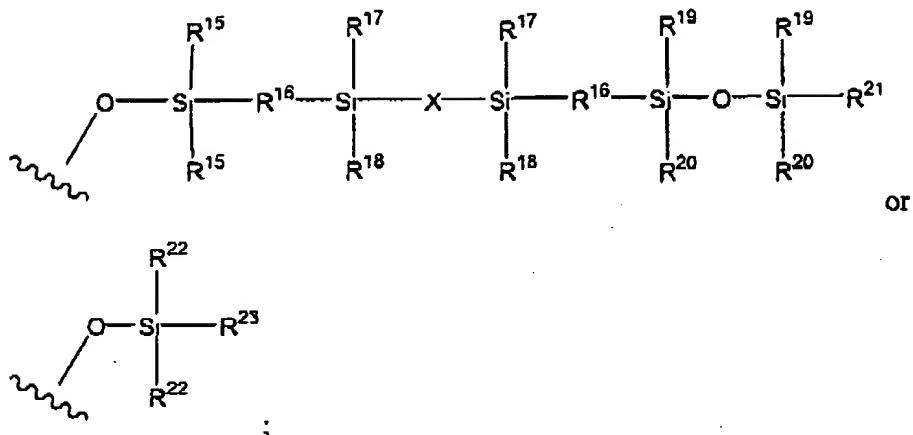


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wherein R¹⁴ is represented by a structural formula selected from:

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each group R¹⁵, each group R¹⁷, each group R¹⁸, each group R¹⁹, each group R²⁰ and each group R²² is independently a substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂ alkyl or aryl group;

each group R¹⁶ is independently a substituted or unsubstituted C₁₋₁₂ alkylene, C₁₋₁₂ cycloalkylene, C₁₋₁₂ arylalkylene, or arylene group, -Y₁-[O-Y₁]_p-, -Y₁-Si(R²)₂-Y₁-, -Y₁-Si(R²)₂-Y₁-O-Y₁-Si(R²)₂-Y₁-, or -Y₁-Si(R²)₂-Y₁-Si(R²)₂-Y₁-;

each R²¹ is independently an epoxide substituted aliphatic group having 2-10 carbon atoms;

R²³ is independently hydrogen, an alkenyl, a substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂-alkyl or aryl or R²-(O-Y₁)_m-, (R²)₃Si-(O-Si(R²)₂)_q-Y₁- or (R²)₃Si-(O-Si(R²)₂)_q-O-;

each group X is independently oxygen or R¹⁶;

each R² is independently a substituted or unsubstituted C₁₋₁₂ alkyl group, C₁₋₁₂ cycloalkylalkyl group, aryl substituted C₁₋₁₂ alkyl group or aryl group;

each Y₁ is independently a C₁₋₁₂ alkylene group;

p is an integer from 1 to 5; m is an integer from 1 to 10; and q is an integer from 0 to 4.

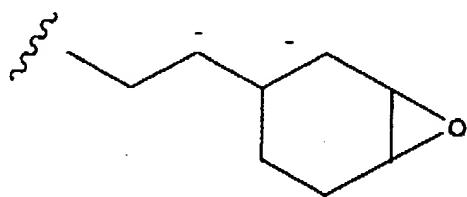
30. (Original) The holographic recording medium of Claim 29 wherein each group R¹⁶ is independently a substituted or unsubstituted C₁₋₁₂ alkylene, C₁₋₁₂ cycloalkylene, C₁₋₁₂

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arylalkylene or arylene group; R²³ is, independently, a hydrogen, a monovalent substituted or unsubstituted C₁₋₁₂ alkyl, C₁₋₁₂ dialkylether (alkyl-O-alkylene-), C₁₋₁₂ cycloalkyl C₁₋₁₂ alkylether, C₁₋₁₂ cycloalkyl, aryl substituted C₁₋₁₂ alkyl or aryl group; and X is oxygen.

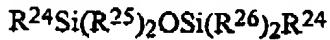
31. (Original) The holographic recording medium of Claim 30 wherein wherein at least one R²¹ comprises a cycloalkene oxide.
32. (Original) The holographic recording medium of Claim 31 wherein each is R²¹ represented by the following structural formula:



33. (Original) The holographic recording medium of Claim 32 wherein each group R¹⁵, R¹⁷, R¹⁸ R¹⁹, R²⁰ and R²² is a methyl group; each group R¹⁶ is an ethylene, hexylene, or octylene group; and R²³ is a hydrogen, hexyl, or alkylether.

34. - 44. (Cancelled)

45. (New) The holographic recording medium of Claim 23 additionally comprising a difunctional monomer.
46. (New) The holographic recording media of Claim 45 wherein the difunctional epoxide monomer is represented by the following structural formula:



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where each group R²⁴ is a 2-(3,4-epoxycyclohexyl)ethyl grouping; each grouping R²⁵ is a methyl group, and each group R²⁶ is a methyl group.

47. (New) The holographic recording medium of Claim 45 wherein the holographic medium comprises between about 0.25 to about 5 parts by weight of the difunctional epoxide monomer per part by weight of the polyfunctional epoxide monomer.
48. (New) The holographic recording medium of Claim 45 wherein the holographic medium comprises from about 90 parts binder and 10 parts monomer or oligomer (w/w) to about 10 parts binder and 90 parts monomer or oligomer (w/w).
49. (New) The holographic recording medium of Claim 23 wherein the acid generator capable of producing an acid upon exposure to actinic radiation is a diaryliodonium salt.
50. (New) A holographic recording medium of Claim 23 wherein the sensitizer is 5,12-bis(phenylethynyl)naphthacene.
51. (New) The holographic recording medium of Claim 23, additionally comprising a monofunctional epoxide monomer.